

Amendments to the Claims

1. (Currently Amended) A detector for the temporally resolved recording of detection events, comprising
 - a converter device (34, 35, 36), which in the operating state supplies an electrical signal when a detection event occurs, and
 - evaluation electronics (1) having
 - at least one trigger (3) that is coupled to the converter device (34, 35, 36) and is designed to supply a trigger signal (5) that is temporally assigned to the electrical signal,
 - at least one time signal source (10) that supplies a first analog time signal (Z1), and
 - at least a first sampler (6) that is coupled to the trigger (3) and is designed to provide a first momentary value (E1) of the first analog time signal (Z1), said first momentary value being temporally assigned to the trigger signal (5).
2. (Currently Amended) A detector as claimed in claim 1, characterized in that wherein the first analog time signal (Z1) has a period.
3. (Currently Amended) A detector as claimed in claim 1 or 2, characterized in that wherein the detector has at least one clock (8) which is provided to measure the time in units of a uniqueness interval (P_{1/2}, P₁) of the first analog time signal.
4. (Currently Amended) A detector as claimed in any of claims 1 to 3, characterized in that wherein the detector is divided into at least two detector channels and each detector channel is assigned to in each case at least one of the triggers (3) and at least one of the samplers (6).
5. (Currently Amended) A detector as claimed in claim 1, characterized in that wherein the evaluation electronics (1) have a second time signal source (11, 21) that supplies a second analog time signal (Z2) and there is a second sampler (7) which is designed to provide a second momentary value (E1') of the second analog time signal (Z2), said second momentary value being temporally assigned to the trigger signal (5).

6. (Currently Amended) A detector as claimed in claim 5, ~~characterized in that wherein~~ the second analog signal source (Z2) is coupled to the first analog signal source (Z1).
7. (Currently Amended) A detector as claimed in ~~any of claims 1-to-6, characterized in that wherein~~ the evaluation electronics (1) have a time calculation unit (23) which is coupled to the first sampler (6), the time calculation unit (23) being designed to calculate a time value which is assigned to the first momentary value (E1).
8. (Currently Amended) A detector as claimed in claim 7, ~~characterized in that wherein~~ at least one multiplexer (12) is arranged between the sampler (6) and the time calculation unit (23).
9. (Currently Amended) An imaging device comprising a detector as claimed in ~~any of~~ claims 1-to-8.
10. (Currently Amended) A method for the temporally resolved recording of detection events, comprising the steps
- conversion of a detection event into an electrical signal,
 - generation of a trigger signal (5) that is temporally assigned to the electrical signal,
 - sampling of at least a first analog time signal (Z1) in temporal association with the trigger signal (5),
 - provision of a first momentary value (E1) of the first analog time signal (Z1).
11. (New) The detector as claimed in claim 5 wherein the second analog time signal is phase shifted from the first analog time signal.
12. (New) The detector as claimed in claim 11 wherein the second analog time signal is orthogonal to the first analog time signal.

13. (New) The method of claim 10 further comprising sampling a second analog time signal in temporal association with the trigger signal and providing a second momentary value of the second analog time signal.
14. (New) The method of claim 13, wherein the first analog time signal and the second analog time signal are phase shifted.
15. (New) The method of claim 14, wherein the first analog time signal is orthogonal to the second analog time signal.
16. (New) An electronics evaluator for an imaging system comprising:
 - an input for at least one electrical trigger signal;
 - at least one time signal source that supplies a first analog time signal; and
 - a means for providing a first momentary value of the first analog time signal and temporally assigning the first momentary value the at least one electrical trigger signal.
17. (New) The electronics evaluator of claim 16 further comprising a time calculation unit which is couple to the means for providing a first momentary value, the time calculation unit providing a time value associated with the first momentary value.
18. (New) The electronics evaluator of claim 16 further comprising a second time signal source that supplies a second analog time signal and a means for providing a second momentary value of the second analog time signal and temporally assigning the second momentary value to the at least one trigger value.
19. (New) The electronics evaluator of claim 18 wherein the first analog time signal and the second analog time signal are phase shifted.
20. (New) The method of claim 19, wherein the first analog time signal is orthogonal to the second analog time signal.